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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,413	07/23/2003	Mark Joseph Skowronski		5196

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EXAMINER	
KIM, TAE JUN	
ART UNIT	PAPER NUMBER
3746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,413	SKOWRONSKI, MARK JOSEPH	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 6-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-8 have not been further treated on the merits.

Claim Rejections - 35 USC § 112 and 35 USC §101

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The subject matter of claim 3:

> "The use of a turbine wheel which uses rotating nozzle or nozzles and such turbine wheel having a translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles"

is not enabled by one of ordinary skill in the art to perform the two underlined conditions. Those limitations are theoretical only and cannot be achieved in the real world.

4. Claims 3-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant does not have possession of an invention with translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles. As these conditions are impossible to achieve in the real world, clearly applicant does not have possession of the features of this claim.

5. Claims 1-11 provide for the use of a wheel or turbine wheel, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper

definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-11 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (c) he has abandoned the invention.

10. Claims 1, 3, 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ross (3,005,311). Ross teaches multiple embodiment including Figs. 104 and Fig. 4 which are applicable to the claims. The use of a turbine wheel using a rotating nozzle 76 (Fig. 3) or 140 (Fig. 4) nozzles located on the wheel's periphery in a simple Brayton cycle. The use

of a turbine wheel which uses rotating nozzle or nozzles and such turbine wheel having a translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles. The use of a rotating seal or seals to allow the turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to rotate independent of the shaft. The use of a turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to be cooled resulting from cooler working fluid gases expanding from the nozzle and surrounding the outside of the turbine wheel or wheels. The use of a varying diameter wheel to match translational velocity of the wheel to the exit speed of the gasses leaving the nozzle(s). The use of multiple nozzles on the same diameter wheel to allow for different output capacities (Fig. 12).

11. Claims 1-4, 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Burton (4,302,683). Burton teaches the use of a turbine wheel using a rotating nozzle 68 or nozzles located on the wheel's periphery in a simple Brayton cycle. The use of a turbine wheel using a rotating nozzle or nozzles located on the wheel's periphery in a recuperated Brayton cycle (col. 9, lines 45+). The Claims of 1, 2, 3, 4, or 5 when used in conjunction with one or more sonic or supersonic nozzles. The use of multiple turbine wheels incorporating claims 1,2, or 3 when operated at the same pressure (col. 15, lines 5+, using plural units at the same pressure) The use of a turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to be cooled resulting from cooler working fluid gases expanding from the nozzle and surrounding the outside of the turbine wheel or wheels. The use of a

rotating seal or seals to allow the turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to rotate independent of the shaft. The use of a varying diameter wheel to match translational velocity of the wheel to the exit speed of the gasses leaving the nozzle(s). The use of multiple nozzles on the same diameter wheel to allow for different output capacities.

12. Claims 3, 5, 6, 7, 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Eskeli (3,748,054). The use of a turbine wheel which uses rotating nozzle or nozzles and such turbine wheel having a translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles. The use of multiple turbine wheels incorporating claims 1,2, or 3 when operated at cascading pressures (col. 2, lines 9+). The Claims of 1, 2, 3, 4, or 5 when used in conjunction with one or more sonic or supersonic nozzles (converging or converging-diverging inherently allows for sonic and/or supersonic flows). The use of a turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to be cooled resulting from cooler working fluid gases expanding from the nozzle and surrounding the outside of the turbine wheel or wheels. The use of a varying diameter wheel to match translational velocity of the wheel to the exit speed of the gasses leaving the nozzle(s). The use of multiple nozzles on the same diameter wheel to allow for different output capacities (col. 2, lines 8+).

13. Claims 1-3, 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Schlote (6,668,539). Schlote teaches the use of a turbine wheel using a rotating nozzle 40

or nozzles located on the wheel's periphery in a simple Brayton cycle. The use of a turbine wheel using a rotating nozzle or nozzles located on the wheel's periphery in a recuperated 30 Brayton cycle. The use of a turbine wheel which uses rotating nozzle or nozzles and such turbine wheel having a translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles. The Claims of 1, 2, 3, 4, or 5 when used in conjunction with one or more sonic or supersonic nozzles (col. 8, lines 56+). The use of a turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to be cooled resulting from cooler working fluid gases expanding from the nozzle and surrounding the outside of the turbine wheel or wheels. The use of a rotating seal or seals 84 to allow the turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to rotate independent of the shaft. The use of a varying diameter wheel to match translational velocity of the wheel to the exit speed of the gasses leaving the nozzle(s). The use of multiple nozzles on the same diameter wheel to allow for different output capacities. The use of different sized nozzles 40 and 50 on the same diameter wheel to allow for different output capacities.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 1-7, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eskeli (3,748,054) in view of either Ross (3,005,311) or Burton (4,302,683). Eskeli teaches the use of a turbine wheel using a rotating nozzle 12 or nozzles located on the wheel's periphery expanding a gas. The use of a turbine wheel which uses rotating nozzle or nozzles and such turbine wheel having a translational speed equal to or nearly equal to the velocity of the working fluid exiting from the nozzle or nozzles to eliminate or mostly eliminate kinetic energy exhaust losses and associated losses which result from stationary nozzles. The use of multiple turbine wheels incorporating claims 1,2, or 3 when operated at cascading pressures (col. 2, lines 9+). The Claims of 1, 2, 3, 4, or 5 when used in conjunction with one or more sonic or supersonic nozzles (converging or converging-diverging allow for sonic and/or supersonic flows). The use of a turbine wheel or wheels of claims 1, 2, 3, 4, 5, or 6 to be cooled resulting from cooler working fluid gases expanding from the nozzle and surrounding the outside of the turbine wheel or wheels. The use of a varying diameter wheel to match translational velocity of the wheel to the exit speed of the gasses leaving the nozzle(s). The use of multiple nozzles on the same diameter wheel to allow for different output capacities (col. 2, lines 8+). Eskeli does not teach the use of a Brayton or recuperated Brayton cycle. Ross teaches a Brayton cycle with a reaction turbine to provide hot gas to the turbine. The use of recuperated Brayton

cycles is well known as evidenced by Burton (4,302,683) for greater thermal efficiency. It would have been obvious to one of ordinary skill in the art to employ the claimed turbine with a Brayton or recuperated Brayton cycle, in order to provide a well known source of hot gases to the turbine of Eskeli. As for the use of multiple turbine wheels incorporating claims 1,2, or 3 when operated at the same pressure, this is regarded as a simple issue of multiplication of parts for increased effect. It would have been obvious to on of ordinary skill in the art to employ multiple turbine wheels to increase the amount of power available.

16. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eskeli (3,748,054) in view of either Ross (3,005,311) or Burton (4,302,683), as applied above, and further in view of Davis (4,776,752). Eskeli teaches various aspects of the claimed invention but does not teach the rotating seal. Davis teaches a rotating seal 38 to prevent leakage. It would have been obvious to one of ordinary skill in the art to employ a rotating seal, to prevent leakage.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eskeli (3,748,054) in view of either Ross (3,005,311) or Burton (4,302,683), as applied above, and further in view of Schlote (6,668,539). Eskeli teaches various aspects of the claimed invention but does not teach the use of different sized nozzles. Schlote teaches the use of different sized nozzles 40 and 42 on the same rotor in order to increase the thrust and power output of the turbine. It would have been obvious to one of ordinary skill in the art

to employ different sized nozzles as an obvious matter of increasing the thrust and/or power output of the turbine.

18. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site http://www.uspto.gov in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 571-273-8300 for Regular faxes and 571-273-8300 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm

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